

MJ:mj 06/10/05 394042 472.US
PATENTAttorney Reference Number 6541-60555-01
Application Number 09/745,268**Remarks**

Reconsideration is requested in view of the preceding amendments and the following remarks. Claims 1-29 are in the application. Claim 1 is amended, and new claims 30-36 are submitted for consideration. Upon entry of this Amendment, claims 1-36 are in the application.

Support for new claims 30-36 can be found at, for example, page 1, last paragraph, page 4, second paragraph of the Detailed Description, and page 8, first paragraph. No new matter is introduced.

Rejections in View of Hall

In the final Office action dated January 10, 2005, claims 1, 3-5, 7-8, 11, 13-15, and 17-18 were rejected as anticipated by Hall et al., U.S. Patent 6,424,837 ("Hall"). This rejection is traversed.

In order to reach a common understanding of Hall, the cited portions (and some accompanying portions) of Hall are set forth below:

A call from a mobile station is carried by a particular cell site based on the received signal strength at/from the various cell sites receiving the signal (or on other signal quality measures, depending upon the protocol used). Col. 4, lines 14-18.

To locate the position of a mobile station, call access attempts are monitored. Col. 5, lines 57-58

One function of the automated testing system is to measure the signal level required to acquire service from a particular cell site 12. To perform this test a monitoring site 10 goes "active," transmitting on a cellular channel control channel assigned to a cell site 12 within range of the monitoring site. The power level of the transmitted signal is initially low enough that it is near or below the noise threshold of the cell site equipment, and thus is not recognized by the cell site. As the power level is gradually increased, the signal reaches a level which is detected by the cell site under test, which then begins the process of establishing the call. The power level required to acquire service is recorded; the test is

MJ:mj 06/10/05 394042 472.US
PATENTAttorney Reference Number 6541-60555-01
Application Number 09/745,268

repeated periodically, so that comparison of test data indicates any change, trend, or degradation in equipment performance. Col. 4, lines 32-46.

The first portion of Hall cited above pertains to conventional mobile call handoff, wherein any particular call is carried by a cell site selected based on performance parameters such as received signal strength. The second cited portion of Hall pertains to a method of geographically locating a mobile station. The third cited portion of Hall pertains to system testing based on transmissions from a monitoring site 10 (a fixed location) to a cell site (a radio base station, also a fixed site).

In contrast to Hall, claim 1 recites a method of monitoring performance of a wireless system that includes evaluating the performance of the wireless system using the uplink performance parameters associated with a communication signal received from a mobile wireless device and the location information of the mobile wireless device. Hall does not teach or suggest evaluating system performance based on uplink performance parameters associated with a mobile wireless device. Instead, Hall teaches testing based on transmissions from a fixed monitoring site. For at least this reason, claim 1 and dependent claims 2-7 and 30-33 are properly allowable over Hall.

Claim 8 recites a method of monitoring performance of a wireless network that includes evaluating the performance of the wireless system using uplink performance parameters associated with a communication from a mobile wireless device and the location information of the mobile wireless device. As noted above, Hall does not teach or suggest such a method. Instead, Hall uses performance parameters associated with communication from a monitoring site, i.e., a fixed device. Therefore, claim 8 and dependent claims 9-10 are properly allowable.

MJ:mj 06/10/05 394042 472.US
PATENTAttorney Reference Number 6541-60555-01
Application Number 09/745,268

Claim 11 recites a method of monitoring performance of a wireless system that includes evaluating the performance of the wireless system using uplink performance parameter associated with communications from the mobile wireless devices and the location information of each of the plurality of mobile wireless devices. As note above, Hall does not teach or suggest any method of monitoring performance of a wireless system using communications from mobile wireless devices. For at least this reason, claim 11 and dependent claims 12-17 are properly allowable.

Claim 18 recites a method of monitoring performance of a wireless system that includes evaluating the performance of the wireless system using uplink performance parameters and location information of a plurality of mobile wireless devices. Hall does not teach or suggest such a method. As noted above, Hall teaches using communications from fixed locations (monitoring sites), not communications from mobile wireless devices. For at least this reason, claim 18 and dependent claims 19-20 are properly allowable.

Rejections in View of Hawkes

Claims 21-25 and 27-29 stand rejected as anticipated by Hawkes et al., U.S. Patent 5,973,643. This rejection is traversed. Hawkes fails to teach or suggest a system for monitoring performance of a wireless system, wherein the system includes a system analyzer coupled to a switch which evaluates the performance of the wireless system based on uplink performance parameters and the location of the wireless devices.

In order to reach of common understanding of Hawkes, the cited portions of Hawkes are set forth below:

MJ:mj 06/10/05 394042 472.US
PATENTAttorney Reference Number 6541-60555-01
Application Number 09/745,268

The mobile location sensors receive and measure signals transmitted from mobile cellular telephones 1 operating within the cellular system. The mobile location sensor RF input signals, 18a, 18b, 18c are acquired from the same antennas 20a, 20b, 20c used by the base station. Col. 5, lines 18-22.

In those base stations that have a single omni-directional antenna, a mobile location sensor would contain only one receiver 25a to collect time of arrival measurements. A two receiver MLS [mobile location sensor] would be used in base stations with two omni-directional diversity antennas. Angle of arrival measurements in this invention require the base station to have two or more antennas and they would be processed by two or more receivers. With two receivers, the phase difference between one pair of antennas can be simultaneously measured. With three receivers, the phase between three pairs of antennas can be measured; thus three receivers provide a three fold improvement in measurement capacity when compared with two receivers. Col. 11, lines 52-64.

This processing technique assumes that the MSC 3 will cause an order confirmation message while the mobile location sensors are collecting location data. Referring to FIG. 1, several mobile location sensors 19a, 19b, and 19c in the vicinity of the cellular telephone 1 are tasked by the real-time location processor 5 to collect location information. This tasking includes when to begin the measurement, when to end the measurement, and how much measurement data to return to the real-time location processor. Col. 16, lines 4-13.

All MLSs connect to the RLP [real-time location processor] 5; via the cellular system real-time network transmission facility such as a metropolitan area network 6. There is one RLP 5 associated with each MSC 3. Col. 5, lines 26-29.

In either configuration, the RLP accepts location requests from the search and queue process and then tasks all the MLSs in the vicinity of the cellular telephone to take measurements on cellular telephone transmissions. Col. 10, lines 56-59.

None of these cited portions teaches, suggests, or mentions evaluating the performance of a wireless system. Instead, all of these portions pertain to finding a location of a mobile emitter. The measurements cited at col. 10, lines 56-59 are associated with location requests received by the real-time location processor (RLP) and tasked to the mobile location sensors (MLSs), and are not associated with an evaluation of wireless system performance.

MJ:mj 06/10/05 394042 472.US
PATENTAttorney Reference Number 6541-60555-01
Application Number 09/745,268

Claims 21, 23-24, 27, and 29 recite a system for monitoring performance of a wireless system that includes a system analyzer coupled to a switch and that evaluates the performance of the wireless system based on uplink performance parameters associated with a plurality of mobile wireless devices and the locations of the wireless devices. As noted above, Hawkes teaches only finding locations of mobile emitters, and does not teach or suggest evaluating the performance of a wireless system based on uplink performance parameters associated with a plurality of mobile wireless devices. Therefore, claims 21, 23, 24, 27, 29 and dependent claims 22, 25-26, 28 are properly allowable.

Rejections under 35 U.S.C. § 103

Claims 2, 6, 9-10, 12, 16, 19-20, and 26 stand rejected as allegedly obvious in view of combinations of Hall and/or Hawkes and additional references. These rejections are traversed. These claims all depend from allowable base claims, and are therefore allowable for at least this reason.

Newly Submitted Claims

New claims 30-33 and 34 depend from allowable claims 1 and 21, respectively, and are hence properly allowable.

New claims 35-36 recite a method of assessing wireless system performance that includes collecting downlink call data and uplink call data associated with a call to a mobile wireless device. Location information associated with the mobile wireless device is obtained, and based on the downlink call data, the uplink call data, and the location information, system performance

MJ:mj 06/10/05 394042 472.US
PATENT

Attorney Reference Number 6541-60555-01
Application Number 09/745,268

is evaluated. No combination of the cited references teaches or suggests such a method, and claims 35-36 are properly allowable.

Conclusion

In view of the preceding, all pending claims are in condition for allowance, and action to such end is respectfully requested. If any issues remain, the Examiner is requested to telephone the undersigned.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By



Michael D. Jones

Registration No. 41,879

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 595-5300
Facsimile: (503) 228-9446